



SEQUENCE LISTING

<110· Curtis, Rory A.J., Lora, Jose M.
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<150· 60/262,252
<151· 2001-01-16
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ccggggggcg ggtgtactggcc gggtttttcc ctggcgccag tagcttcccg aggggggttg 300
caccggagggc gggtagtgcg ggtttttcc ctggcgccag tagcttcccg aggggggttg 360
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Gln Leu Leu Trp Gly His Leu Asp Ala Gln Pro Ala Glu Arg Gly
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ggc cag gag ctg cgc aag gag ggc gag gca ttc cta gag aag tac gga 448
Gly Gln Glu Leu Arg Lys Glu Ala Glu Ala Phe Leu Glu Lys Tyr Gly
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tac ctc aat gaa cag gtc ccc aaa gct ccc acc tcc act cga ttc aco 496
Tyr Leu Asn Glu Gln Val Pro Lys Ala Pro Thr Ser Thr Arg Phe Ser
45 50 55 60
gat gcc atc aga gcg ttt cag tgg gtg tcc cag cta cct gtc aco ggc 544
Asp Ala Ile Arg Ala Phe Gln Trp Val Ser Gln Leu Pro Val Ser Gly
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gtt ttg gac cgc gct acc ctg cgc cag atg act cgt ccc cgc tgc ggg 592
Val Leu Asp Arg Ala Thr Leu Arg Gln Met Thr Arg Pro Arg Cys Gly
80 85 90
gtt aca gat acc aac agt tat gcg gcc tgg gct gag agg atc agt gaa 640
Val Thr Asp Thr Asn Ser Tyr Ala Ala Trp Ala Glu Arg Ile Ser Asp
95 100 105
ttt ttt gct aga cac cgg acc aaa atg agg cgt aag aaa cgc ttt gca 688
Leu Phe Ala Arg His Arg Thr Lys Met Arg Arg Lys Lys Arg Phe Ala
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aa g caa ggg ggc gcc ctg ggc cac gcc ttc ctg ccc cgc cgg ggc gaa 735
Lys Gln Gly Gly Ala Leu Ala His Ala Phe Leu Pro Arg Arg Gly Glu
125 130 135 140
gcg cac ttc gac caa gat gag cgc tgg tcc ctg aco cgc cgg cgg ggg 734
Ala His Phe Asp Gln Asp Glu Arg Trp Ser Leu Ser Arg Arg Arg Gly
145 150 155

ccg aac atg ttc gtg gtg ctg gcg car gag atc ggt ccc acc ctt ggc	832
Arg Asn Leu Phe Val Val Leu Ala His Glu Ile Gly His Thr Leu Gly	
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ctc aac ccc tcc ggg ccc ccc ggg atc ggg ccc tac tac aag	880
Leu Thr His Ser Pro Ala Pro Arg Ala Leu Met Ala Pro Tyr Tyr Lys	
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agg ctg ggc cgc gag ggg ctg aac tgg gag gag gtc ccc ggg gtgg	928
Arg Leu Gly Arg Asp Ala Leu Leu Ser Trp Asp Asp Val Leu Ala Val	
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cac agc ctg tat ggg aac ccc cta ggg ggc tca ggg gct gtc gag ctc	976
Gln Ser Leu Tyr Gly Lys Pro Leu Gly Gly Ser Val Ala Val Gln Leu	
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Pro Gly Lys Leu Thr Asp Phe Glu Thr Trp Asp Ser Tyr Ser Pro	
225 230 235	
caa gga agg cgc cct gaa aac cag ggc ccc aaa tac tgg cac tac tcc	1072
Gln Gly Arg Arg Pro Glu Thr Gln Gly Pro Lys Tyr Cys His Ser Ser	
240 245 250	
tcc gat gct atc act gta gag agg caa cag caa ctg tac att ttt aaa	1120
Phe Asp Ala Ile Thr Val Asp Arg Gln Gln Leu Tyr Ile Phe Lys	
255 260 265	
ggg aac cat ttc tgg gag gtgg gca gct gat ggc aac gac tca gag ccc	1163
Gly Ser His Phe Trp Glu Val Ala Ala Asp Gly Asn Val Ser Glu Pro	
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cgt cca ctg cag gaa aya tgg gtc ggg ctg ccc ccc aac att gag gct	1215
Arg Pro Leu Gln Glu Arg Trp Val Gly Leu Pro Pro Asn Ile Glu Ala	
285 290 295 300	
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Ala Ala Val Ser Leu Asn Asp Gly Asp Phe Tyr Phe Phe Lys Gly Gly	
305 310 315	
cga tgg tgg agg ttc cgg ggc ccc aac cca gtg tgg ggt ctc cca cag	1312
Arg Cys Trp Arg Phe Arg Gly Pro Lys Pro Val Trp Gly Leu Pro Gln	
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Leu Cys Arg Ala Gly Gly Leu Pro Arg His Pro Asp Ala Ala Leu Phe	
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Phe Pro Pro Leu Arg Arg Leu Leu Phe Lys Gly Ala Arg Tyr Tyr	
350 355 360	
gtg ctg gcc cga ggg gga ctg caa gtg gag ccc tac tac ccc cga agt	1455
Val Leu Ala Arg Gly Gly Leu Gln Val Glu Pro Tyr Tyr Pro Arg Ser	
365 370 375 380	
ctg cag gag tgg gga ggg atc ccc gag gag gtc aac gac gcc ctg ccc	1504
Leu Gln Asp Trp Gly Gly Ile Pro Glu Glu Val Ser Gly Ala Leu Pro	
385 390 395	
agg ccc gat ggc tcc atc atc ttc ttc cga gat gac ccc tac tgg ccc	1552
Arg Pro Asp Gly Ser Ile Ile Phe Phe Arg Asp Asp Arg Tyr Trp Arg	
400 405 410	
ctc gag ccc gac gcc aac ctg cag gca acc acc tac ggg ccc tgg gcc acc	1600
Leu Asp Gln Ala Lys Leu Gln Ala Thr Thr Ser Gly Arg Trp Ala Thr	
415 420 425	
gag ctg ccc tgg atg ggc tgg cat gcc aac tgg ggg aac gcc ctg	1643
Glu Leu Pro Trp Met Gly Cys Trp His Ala Asn Ser Gly Ser Ala Leu	
430 435 440	
ttc tgg aaggccat ttttccatcc agaaaactgggt ggtgttccca gggccaaaattc	1701
Phe	
445	
atgtttccccca ccgggggggc agaacccttc tttagaagct ctgagtcct ctgcagaaga	1761

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211 • 445

•(212) PRT

•213> Homo sapiens

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 35 40 45
 Gin Val Pro Lys Ala Pro Thr Ser Thr Arg Phe Ser Asp Ala Ile Arg
 50 55 60
 Ala Phe Gln Trp Val Ser Gln Leu Pro Val Ser Gly Val Leu Asp Arg
 65 70 75 80
 Ala Thr Leu Arg Gln Met Thr Arg Pro Arg Cys Gly Val Thr Asp Thr
 85 90 95
 Asn Ser Tyr Ala Ala Trp Ala Glu Arg Ile Ser Asp Leu Phe Ala Arg
 100 105 110
 His Arg Thr Lys Met Arg Arg Lys Lys Arg Phe Ala Lys Gln Gly Gly
 115 120 125
 Ala Leu Ala His Ala Phe Leu Pro Arg Arg Gly Glu Ala His Phe Asp
 130 135 140
 Gin Asp Glu Arg Trp Ser Leu Ser Arg Arg Arg Gly Arg Asn Leu Phe
 145 150 155 160
 Val Val Leu Ala His Glu Ile Gly His Thr Leu Gly Leu Thr His Ser
 165 170 175
 Pro Ala Pro Arg Ala Leu Met Ala Pro Tyr Tyr Lys Arg Leu Gly Arg
 180 185 190
 Asp Ala Leu Leu Ser Trp Asp Asp Val Leu Ala Val Gln Ser Leu Tyr
 195 200 205
 Gly Lys Pro Leu Gly Gly Ser Val Ala Val Gln Leu Pro Gly Lys Leu
 210 215 220
 Phe Thr Asp Phe Glu Thr Trp Asp Ser Tyr Ser Pro Gln Gly Arg Arg
 225 230 235 240
 Pro Glu Thr Gln Gly Pro Lys Tyr Cys His Ser Ser Phe Asp Ala Ile
 245 250 255
 Thr Val Asp Arg Gln Gln Leu Tyr Ile Phe Lys Gly Ser His Phe
 260 265 270
 Trp Glu Val Ala Ala Asp Gly Asn Val Ser Glu Pro Arg Pro Leu Gln
 275 280 285
 Glu Arg Trp Val Gly Leu Pro Pro Asn Ile Glu Ala Ala Ala Val Ser
 290 295 300
 Leu Asn Asp Gly Asp Phe Tyr Phe Phe Lys Gly Gly Arg Cys Trp Arg
 305 310 315 320
 Phe Arg Gly Pro Lys Pro Val Trp Gly Leu Pro Gln Leu Cys Arg Ala
 325 330 335
 Gly Gly Leu Pro Arg His Pro Asp Ala Ala Leu Phe Phe Pro Pro Leu
 340 345 350
 Arg Arg Leu Ile Leu Phe Lys Gly Ala Arg Tyr Tyr Val Leu Ala Arg
 355 360 365
 Gly Gly Leu Gln Val Glu Pro Tyr Tyr Pro Arg Ser Leu Gln Asp Trp
 370 375 380
 Gly Gly Ile Pro Glu Glu Val Ser Gly Ala Leu Pro Arg Pro Asp Gly
 385 390 395 400
 Ser Ile Ile Phe Phe Arg Asp Asp Arg Tyr Trp Arg Leu Asp Gln Ala
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 Lys Leu Gln Ala Thr Thr Ser Gly Arg Trp Ala Thr Glu Leu Pro Trp
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cgc aag gag ggc gag gca ttc cta gag aag tac gga tac ctc aat gaa Arg Lys Glu Ala Glu Ala Phe Leu Glu Lys Tyr Gly Tyr Leu Asn Glu 35 40 45	144
cag gtc ccc aaa gct ccc acc tcc act cga ttc agc gat gcc atc aga Gln Val Pro Lys Ala Pro Thr Ser Thr Arg Phe Ser Asp Ala Ile Arg 50 55 60	192
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gcr acc ctg cgc cag atg act cgt ccc cgc tgc ggg gtt aca gat acc Ala Thr Leu Arg Gln Met Thr Arg Pro Arg Cys Gly Val Thr Asp Thr 85 90 95	288
aac agt tat gcg gcc tgg gct gag agg atc agt gac ttg ttt gct aga Asn Ser Tyr Ala Ala Trp Ala Glu Arg Ile Ser Asp Leu Phe Ala Arg 100 105 110	336
cac cgg acc aaa atg agg cgt aag aaa cgc ttt gca aag caa ggg ggc His Arg Thr Lys Met Arg Arg Lys Arg Phe Ala Lys Gln Gly Gly 115 120 125	384
gcc ctg gcg cac gcc ttc ctg ccc cgc cgc ggc gaa gcg cac ttc gac Ala Leu Ala His Ala Phe Leu Pro Arg Arg Gly Glu Ala His Phe Asp 130 135 140	432
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gtg gtg ctg gcg cac gag atc ggt cac acg ctt ggc ctc acc cac tcg Val Val Leu Ala His Glu Ile Gly His Thr Leu Gly Leu Thr His Ser 165 170 175	523
ccc gcg ccg cgc gcg ctc atg gcg ccc tac tac aag agg ctg ggc cgc Pro Ala Pro Arg Ala Leu Met Ala Pro Tyr Tyr Lys Arg Leu Gly Arg 180 185 190	575
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Trp Glu Val Ala Ala Asp Gly Asn Val Ser Glu Pro Arg Pro Leu Gln			
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Glu Arg Trp Val Gly Leu Pro Pro Asn Ile Glu Ala Ala Ala Val Ser			
290	295	300	
tgc aat gat gga gat ttc tac ttc ttg aaa ggg ggt cga tgc tgg agg		960	
Leu Asn Asp Gly Asp Phe Tyr Phe Lys Gly Gly Arg Cys Trp Arg			
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tgc cgg ggc ccc aag cca gtg tgg ggt ctc cca cag ctg tgc cgg gca		1008	
Phe Arg Gly Pro Lys Pro Val Trp Gly Leu Pro Gln Leu Cys Arg Ala			
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ggg ggc ctg ccc cgc cat cct gac gcc gcc ctc ttc cct cct ctg		1056	
Gly Gly Leu Pro Arg His Pro Asp Ala Ala Leu Phe Phe Pro Pro Leu			
340	345	350	
cgc cgc ctc atc ctc ttc aag ggt gcc cgc tac tac gtg ctg gct cga		1104	
Arg Arg Leu Ile Leu Phe Lys Gly Ala Arg Tyr Tyr Val Leu Ala Arg			
355	360	365	
ggg gga ctg caa gtg gag ccc tac tac ccc cga agt ctg cag gag tgg		1152	
Gly Gly Leu Gln Val Glu Pro Tyr Tyr Pro Arg Ser Leu Gln Asp Trp			
370	375	380	
gga ggc atc cct gag gag gtc agc ggc gcc ctg ccc agg ccc gat ggc		1200	
Gly Gly Ile Pro Glu Val Ser Gly Ala Leu Pro Arg Pro Asp Gly			
385	390	395	400
tcc atc atc ttc ttc cga gat gac cgc tac tgg cgc ctc gac cag gcc		1248	
Ser Ile Ile Phe Phe Arg Asp Asp Arg Tyr Trp Arg Leu Asp Gln Ala			
405	410	415	
aaa ctg cag gca acc acc tcc ggc cgc tgg gcc acc gag ctg ccc tgg		1296	
Lys Leu Gln Ala Thr Thr Ser Gly Arg Trp Ala Thr Glu Leu Pro Trp			
420	425	430	
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Gin Lys Phe Phe Gly Leu Pro Val Thr Gly Lys Leu Asp Ser Asn Thr			
35	40	45	
Leu Glu Val Met Lys Lys Pro Arg Cys Gly Val Pro Asp Val Gly Glu			
50	55	60	
Phe Arg Thr Phe Pro Gly Ser Pro Lys Trp Ser Lys Asn Asn Leu Leu			
65	70	75	80
Thr Tyr Arg Ile Val Asn Tyr Thr Pro Asp Leu Pro Arg Glu Asp Val			
85	90	95	
Asp Asp Ala Ile Arg Arg Ala Phe Gln Val Trp Ser Asp Val Thr Pro			
100	105	110	
Leu Thr Phe Thr Arg Val Ser Asp Gly Glu Ala Asp Ile Met Ile Ser			
115	120	125	
Phe Ala Arg Gly Glu His Gly Asp Phe Tyr Pro Phe Asp Gly Lys Gly			
130	135	140	
Gly Leu Leu Ala His Ala Phe Ala Pro Gly Pro Gly Ile Gly Ile Gly			
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165	170		

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 <213> Artificial Sequence

 <220>
 <223> Consensus

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 Pro Cys
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 <211> 471
 <212> PRT
 <213> Homo sapiens

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 Glu Glu Asp Leu Gln Phe Ala Glu Arg Tyr Leu Arg Ser Tyr Tyr His
 35 40 45
 Pro Thr Asn Leu Ala Gly Ile Leu Lys Glu Asn Ala Ala Ser Ser Met
 50 55 60
 Thr Glu Arg Leu Arg Glu Met Gln Ser Phe Phe Gly Leu Glu Val Thr
 65 70 75 80
 Gly Lys Leu Asp Asp Asn Thr Leu Asp Val Met Lys Lys Pro Arg Cys
 85 90 95
 Gly Val Pro Asp Val Gly Glu Tyr Asn Val Phe Pro Arg Thr Leu Lys
 100 105 110
 Trp Ser Lys Met Asn Leu Thr Tyr Arg Ile Val Asn Tyr Thr Pro Asp
 115 120 125
 Met Thr His Ser Glu Val Glu Lys Ala Phe Lys Lys Ala Phe Lys Val
 130 135 140
 Trp Ser Asp Val Thr Pro Leu Asn Phe Thr Arg Leu His Asp Gly Ile
 145 150 155 160
 Ala Asp Ile Met Ile Ser Phe Gly Ile Lys Glu His Gly Asp Phe Tyr
 165 170 175
 Pro Phe Asp Gly Pro Ser Gly Leu Leu Ala His Ala Phe Pro Pro Gly
 180 185 190
 Pro Asn Tyr Gly Gly Asp Ala His Phe Asp Asp Glu Thr Trp Thr
 195 200 205
 Ser Ser Ser Lys Gly Tyr Asn Leu Phe Leu Val Ala Ala His Glu Phe
 210 215 220
 Gly His Ser Leu Gly Leu Asp His Ser Lys Asp Pro Gly Ala Leu Met
 225 230 235 240
 Phe Pro Ile Tyr Thr Tyr Thr Gly Lys Ser His Phe Met Leu Pro Asp
 245 250 255
 Asp Asp Val Gln Gly Ile Gln Ser Leu Tyr Gly Pro Gly Asp Glu Asp
 260 265 270
 Pro Asn Pro Lys His Pro Lys Thr Pro Asp Lys Cys Asp Pro Ser Leu
 275 280 285
 Ser Leu Asp Ala Ile Thr Ser Leu Arg Gly Glu Thr Met Ile Phe Lys
 290 295 300
 Asp Arg Phe Phe Trp Arg Leu His Pro Gln Gln Val Asp Ala Glu Leu
 305 310 315 320
 Phe Leu Thr Lys Ser Phe Trp Pro Glu Leu Pro Asn Arg Ile Asp Ala
 325 330 335
 Ala Tyr Glu His Pro Ser His Asp Leu Ile Phe Ile Phe Arg Gly Arg
 340 345 350
 Lys Phe Trp Ala Leu Asn Gly Tyr Asp Ile Leu Glu Gly Tyr Pro Lys
 355 360 365
 Lys Ile Ser Glu Leu Gly Leu Pro Lys Glu Val Lys Lys Ile Ser Ala
 370 375 380
 Ala Val His Phe Glu Asp Thr Gly Lys Thr Leu Leu Phe Ser Gly Asn
 385 390 395 400
 Gln Val Trp Arg Tyr Asp Asp Thr Asn His Ile Met Asp Lys Asp Tyr
 405 410 415

Pro Arg Leu Ile Glu Glu Asp Phe Pro Gly Ile Gly Asp Lys Val Asp
420 425 430
Ala Val Tyr Glu Lys Asn Gly Tyr Ile Tyr Phe Phe Asn Gly Pro Ile
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Ala Asn Ser Ile Leu Trp Cys
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<220>
<223> consensus

<221> VARIANT
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<221> VARIANT
<222> (2)...(2)
<223> Xaa at position 2 = A, E, Q, D, N, L, G, K, S, V, R, T, P, I,
M, F, Y, C, W, or H.

<221> VARIANT
<222> (3)...(3)
<223> Xaa at position 3 = A, E, Q, D, N, L, G, K, S, V, R, T, P, I,
M, F, Y, C, W, or H.

<221> VARIANT
<222> (6)...(6)
<223> Xaa at position 6 = L, I, V, M, Y, or W.

<221> VARIANT
<222> (7)...(7)
<223> Xaa at position 7 = A, Q, N, L, G, S, V, T, I, M, F, Y, C, or W.

<221> VARIANT
<222> (9)...(9)
<223> Xaa at position 9 = A, E, Q, D, N, L, G, K, S, V, R, T, P, I,
M, F, Y, C, W, or H.

<221> VARIANT
<222> (10)...(10)
<223> Xaa at position 10 = L, I, V, M, F, Y, W, G, S, P, or Q.

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Xaa Xaa Xaa His Glu Xaa Xaa His Xaa Xaa
1 5 10

<210> 8
<211> 2527
<212> DNA
<213> Homo sapiens

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ccagggagg agggggccag agcgcgcggc taggcactg gggaaaaccctt gggacagtcc 180
cttcttgtgc gggggggggc cagacgttc ccataccggg ggtccgggc ggggtggact 240
gggggttgtt tccctggcg cagttagtcc cccggccggg ctgcacccggta ggggggcgag 299
atg gtc gcg cgc gtc gtc ctg ctg cgc gca ctg cag ctg cta ctg 347
Met Val Ala Arg Val Gly Leu Leu Arg Ala Leu Gln Leu Leu Leu
1 5 10 15

tgg ggc cac ctg gac gca cag ccc gcg gag cgc gga ggc cag gag ctg 395
Trp Gly His Leu Asp Ala Gln Pro Ala Glu Arg Gly Gly Gln Glu Leu

20

25

30

cgc aag gag gcg gag gca ttc cta gag aag tac gga tac ctc aat gaa Arg Lys Glu Ala Glu Ala Phe Leu Glu Lys Tyr Gly Tyr Leu Asn Glu 35 40 45	443
cag gtc ccc aaa gct ccc acc tcc act cga ttc agc gat gcc atc aga Gln Val Pro Lys Ala Pro Thr Ser Thr Arg Phe Ser Asp Ala Ile Arg 50 55 60	491
gag ttt cag tgg gtg tcc cag cta cct gtc agc ggc gtg ttg gac cgc Ala Phe Gln Trp Val Ser Gln Leu Pro Val Ser Gly Val Leu Asp Arg 65 70 75 80	539
gcc acc ctg cgc cag atg act cgt ccc cgc tgc ggg gtt aca gat acc Ala Thr Leu Arg Gln Met Thr Arg Pro Arg Cys Gly Val Thr Asp Thr 85 90 95	587
aac agt tat gcg gcc tgg gct gag agg atc agt gac ttg ttt gct aga Asn Ser Tyr Ala Ala Trp Ala Glu Arg Ile Ser Asp Leu Phe Ala Arg 100 105 110	635
cac cgg acc aaa atg agg cgt aag aaa cgc ttt gca aag caa ggt aac His Arg Thr Lys Met Arg Arg Lys Lys Arg Phe Ala Lys Gln Gly Asn 115 120 125	683
aaa tgg tac aag cag cac ctc tac cgc ctg gtc aac tgg cct gag Lys Trp Tyr Lys Gln His Leu Ser Tyr Arg Leu Val Asn Trp Pro Glu 130 135 140	731
cat ctg ccg gag ccg gca gtt cgg ggc gcc gtg cgc gcc gcc ttc cag His Leu Pro Glu Pro Ala Val Arg Gly Ala Val Arg Ala Ala Phe Gln 145 150 155 160	779
ttg tgg agc aac gtc tca gcg ctg gag ttc tgg gag gcc cca gcc aca Leu Trp Ser Asn Val Ser Ala Leu Glu Phe Trp Glu Ala Pro Ala Thr 165 170 175	827
ggc ccc gct gac atc cgg ctc acc ttc ttc caa ggg gac cac aac gat Gly Pro Ala Asp Ile Arg Leu Thr Phe Phe Gln Gly Asp His Asn Asp 180 185 190	875
ggg ctg ggc aat gcc ttt gat ggc cca ggg ggc gcc ctg gcg cac gcc Gly Leu Gly Asn Ala Phe Asp Gly Pro Gly Gly Ala Leu Ala His Ala 195 200 205	923
ttc ctg ccc cgc ggc gaa gcg cac ttc gac caa gat gag cgc tgg Phe Leu Pro Arg Arg Gly Glu Ala His Phe Asp Gln Asp Glu Arg Trp 210 215 220	971
tcc ctg agc cgc cgc ggg cgc aac ctg ttc gtg gtg ctg gcg cac Ser Leu Ser Arg Arg Gly Arg Asn Leu Phe Val Val Leu Ala His 225 230 235 240	1019
gag atc ggt cac acg ctt ggc ctc acc cac tcg ccc gcg cgc cgc gcg Glu Ile Gly His Thr Leu Gly Leu Thr His Ser Pro Ala Pro Arg Ala 245 250 255	1067
tcc atg gcg ccc tac tac aag agg ctg ggc cgc gac gcg ctg ctc agc Leu Met Ala Pro Tyr Tyr Lys Arg Leu Gly Arg Asp Ala Leu Leu Ser 260 265 270	1115
tgg gac gac gtg ctg gcc gtg cag agc ctg tat ggg aag ccc cta ggg Trp Asp Asp Val Leu Ala Val Gln Ser Leu Tyr Gly Lys Pro Leu Gly 275 280 285	1163
ggc tca gtg gcc gtc cag ctc cca gga aag ctg ttc act gac ttt gag Gly Ser Val Ala Val Gln Leu Pro Gly Lys Leu Phe Thr Asp Phe Glu 290 295 300	1211
acc tgg gac tcc tac agc ccc caa gga agg cgc cct gaa acg cag ggc Thr Trp Asp Ser Tyr Ser Pro Gln Gly Arg Arg Pro Glu Thr Gln Gly 305 310 315 320	1259
cct aaa tac tgc cac tct tcc gat gcc atc act gta gac agg caa Pro Lys Tyr Cys His Ser Ser Phe Asp Ala Ile Thr Val Asp Arg Gln 325 330 335	1307

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Arg Lys Gln Ala Glu Ala Phe Leu Glu Lys Tyr Gly Tyr Leu Asn Glu
      35         40         45
Gln Val Pro Lys Ala Pro Thr Ser Thr Arg Phe Ser Asp Ala Ile Arg
      50         55         60
Ala Phe Gln Trp Val Ser Gln Leu Pro Val Ser Gly Val Leu Asp Arg
      65         70         75         80

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Ala Thr Leu Arg Gln Met Thr Arg Pro Arg Cys Gly Val Thr Asp Thr
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 Asn Ser Tyr Ala Ala Trp Ala Glu Arg Ile Ser Asp Leu Phe Ala Arg
 100 105 110
 His Arg Thr Lys Met Arg Arg Lys Lys Arg Phe Ala Lys Gln Gly Asn
 115 120 125
 Lys Trp Tyr Lys Gln His Leu Ser Tyr Arg Leu Val Asn Trp Pro Glu
 130 135 140
 His Leu Pro Glu Pro Ala Val Arg Gly Ala Val Arg Ala Ala Phe Gln
 145 150 155 160
 Leu Trp Ser Asn Val Ser Ala Leu Glu Phe Trp Glu Ala Pro Ala Thr
 165 170 175
 Gly Pro Ala Asp Ile Arg Leu Thr Phe Phe Gln Gly Asp His Asn Asp
 180 185 190
 Gly Leu Gly Asn Ala Phe Asp Gly Pro Gly Gly Ala Leu Ala His Ala
 195 200 205
 Phe Leu Pro Arg Arg Gly Glu Ala His Phe Asp Gln Asp Glu Arg Trp
 210 215 220
 Ser Leu Ser Arg Arg Arg Gly Arg Asn Leu Phe Val Val Leu Ala His
 225 230 235 240
 Glu Ile Gly His Thr Leu Gly Leu Thr His Ser Pro Ala Pro Arg Ala
 245 250 255
 Leu Met Ala Pro Tyr Tyr Lys Arg Leu Gly Arg Asp Ala Leu Leu Ser
 260 265 270
 Trp Asp Asp Val Leu Ala Val Gln Ser Leu Tyr Gly Lys Pro Leu Gly
 275 280 285
 Gly Ser Val Ala Val Gln Leu Pro Gly Lys Leu Phe Thr Asp Phe Glu
 290 295 300
 Thr Trp Asp Ser Tyr Ser Pro Gln Gly Arg Arg Pro Glu Thr Gln Gly
 305 310 315 320
 Pro Lys Tyr Cys His Ser Ser Phe Asp Ala Ile Thr Val Asp Arg Gin
 325 330 335
 Gln Gln Leu Tyr Ile Phe Lys Gly Ser His Phe Trp Glu Val Ala Ala
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 Asp Gly Asn Val Ser Glu Pro Arg Pro Leu Gln Glu Arg Trp Val Gly
 355 360 365
 Leu Pro Pro Asn Ile Glu Ala Ala Ala Val Ser Leu Asn Asp Gly Asp
 370 375 380
 Phe Tyr Phe Phe Lys Gly Gly Arg Cys Trp Arg Phe Arg Gly Pro Lys
 385 390 395 400
 Pro Val Trp Gly Leu Pro Gln Leu Cys Arg Ala Gly Gly Leu Pro Arg
 405 410 415
 His Pro Asp Ala Ala Leu Phe Phe Pro Pro Leu Arg Arg Leu Ile Leu
 420 425 430
 Phe Lys Gly Ala Arg Tyr Tyr Val Leu Ala Arg Gly Gly Leu Gln Val
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 Glu Pro Tyr Tyr Pro Arg Ser Leu Gln Asp Trp Gly Gly Ile Pro Glu
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 465 470 475 480
 Arg Asp Asp Arg Tyr Trp Arg Leu Asp Gln Ala Lys Leu Gln Ala Thr
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Met. Val

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cgc aag gag gca gag gca ttc cta gag aag tac gga tac ctc aat gaa 14

Arg Lys Glu Ala Glu Ala Phe Leu Glu Lys Tyr Gly Tyr Leu Asn Glu			
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cag gtc ccc aaa gct ccc acc tcc act cga ttc agt gat gcc atc aca			192
Gln Val Pro Lys Ala Pro Thr Ser Thr Arg Phe Ser Asp Ala Ile Arg			
50	55	60	
gcg ttt cag tgg gtg tcc cag cta cct gtc aac ggc gtc ttg gac cgc			240
Ala Phe Gln Trp Val Ser Gln Leu Pro Val Ser Gly Val Leu Asp Arg			
65	70	75	80
gcc acc ctg cgc cag atg act cgt ccc cgc tgc ggg gtt aca gat acc			233
Ala Thr Leu Arg Gln Met Thr Arg Pro Arg Cys Gly Val Thr Asp Thr			
85	90	95	
aac agt tat gcg gcc tgg gct gag agg atc agt gac ttg ttt gct aga			335
Asn Ser Tyr Ala Ala Trp Ala Glu Arg Ile Ser Asp Leu Phe Ala Arg			
100	105	110	
cac cgg acc aaa atg agg cgt aag aaa cgc ttt gca aag caa ggt aac			384
His Arg Thr Lys Met Arg Arg Lys Lys Arg Phe Ala Lys Gln Gly Asn			
115	120	125	
aaa tgg lac aag cag cac ctc tcc tac cgc ctg gtc aac tgg cct gag			432
Lys Trp Tyr Lys Gln His Leu Ser Tyr Arg Leu Val Asn Trp Pro Glu			
130	135	140	
cat ctg ccg gag ccc gca gtt cgg ggc gcc gtc cgc gcc gcc ttc cag			480
His Leu Pro Glu Pro Ala Val Arg Gly Ala Val Arg Ala Ala Phe Gln			
145	150	155	160
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Leu Trp Ser Asn Val Ser Ala Leu Glu Phe Trp Glu Ala Pro Ala Thr			
165	170	175	
ggc ccc gct gac atc cgg ctc acc ttc tcc caa ggg gac cac aac gat			576
Gly Pro Ala Asp Ile Arg Leu Thr Phe Phe Gln Gly Asp His Asn Asp			
180	185	190	
ggc ctg ggc aat gcc ttt gat ggc cca ggg ggc gcc ctg ggc cac gcc			624
Gly Leu Gly Asn Ala Phe Asp Gly Pro Gly Gly Ala Leu Ala His Ala			
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Phe Leu Pro Arg Arg Gly Glu Ala His Phe Asp Gln Asp Glu Arg Trp			
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Ser Leu Ser Arg Arg Gly Arg Asn Leu Phe Val Val Leu Ala His			
225	230	235	240
gag atc ggt cac acg ctt ggc ctc acc cac tcc ccc gcc ccc ccc			763
Glu Ile Gly His Thr Leu Gly Leu Thr His Ser Pro Ala Pro Arg Ala			
245	250	255	
ctc atg gca ccc tac tac aag agg ctg ggc ccc gac gcc ctc aac			816
Leu Met Ala Pro Tyr Tyr Lys Arg Leu Gly Arg Asp Ala Leu Leu Ser			
260	265	270	
tgg gag gac gtc gtc gtc gtc gtc gac agt ctg tat ggc aag ccc cta ggg			864
Trp Asp Val Leu Ala Val Gln Ser Leu Tyr Gly Lys Pro Leu Gly			
275	280	285	
ggc tca gtc gcc gtc cag ctc cca gga aag ctg ttc act gac ttt gag			912
Gly Ser Val Ala Val Gln Leu Pro Gly Lys Leu Phe Thr Asp Phe Gln			
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Thr Trp Asp Ser Tyr Ser Pro Gln Gly Arg Arg Pro Glu Thr Gln Gly			
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cct aaa tac tcc cac tat tcc gat gcc atc acg gta gac agg caa			1008
Pro Lys Tyr Cys His Ser Ser Phe Asp Ala Ile Thr Val Asp Arg Gln			
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cag caa ctg tac att ttt aaa ggg agc cat ttc tgg gag tgg gca gct			1056
Gln Gln Leu Tyr Ile Phe Lys Gly Ser His Phe Trp Glu Val Ala Ala			

340

345

350

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ctg ccc ccc aac att gag gct gcg gca gtg tca ttg aat gat gga gat Leu Pro Pro Asn Ile Glu Ala Ala Ala Val Ser Leu Asn Asp Gly Asp 370 375 380	1152
ttc tac ttc ttc aaa ggg ggt cga tgc tgg agg ttc cgg ggc ccc aag Phe Tyr Phe Phe Lys Gly Gly Arg Cys Trp Arg Phe Arg Gly Pro Lys 385 390 395 400	1200
cca gtg tgg ggt ctc cca cag ctg tgc cgg gca ggg ggc ctg ccc cgc Pro Val Trp Gly Leu Pro Gln Leu Cys Arg Ala Gly Gly Leu Pro Arg 405 410 415	1243
cat cct gac gcc gcc ctc ttc cct cct ctg cgc cgc ctc atc ctc His Pro Asp Ala Ala Leu Phe Phe Pro Pro Leu Arg Arg Leu Ile Leu 420 425 430	1296
ttc aag ggt gcc cgc tac tac gtg ctg gcc cga ggg gga ctg caa gtg Phe Lys Ala Arg Tyr Tyr Val Leu Ala Arg Gly Gly Leu Gln Val 435 440 445	1344
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cga gat gac cgc tac tgg cgc ctc gac cag gcc aaa ctg cag gca acc Arg Asp Asp Arg Tyr Trp Arg Leu Asp Gln Ala Lys Leu Gln Ala Thr 485 490 495	1488
acc tcg ggc cgc tgg gcc acc gag ctg ccc tgg atg ggc tgc tgg cat Thr Ser Gly Arg Trp Ala Thr Glu Leu Pro Trp Met Gly Cys Trp His 500 505 510	1536
gcc aac tcg ggg agc gcc ctg ttc tga Ala Asn Ser Gly Ser Ala Leu Phe * 515 520	1563